Teaching Statement
Hongyu Chen

I regard teaching as a privilege rather than an obligation. As the son of a teacher, I have been brought up in an environment where I was able to witness how education can contribute profoundly to each individual student’s life. As a researcher, I have recognized from my own teaching experiences - both in the classroom and in the form of introducing younger colleagues to the field - that teaching encourages thorough rethinking of existing knowledge. I believe that such analysis can often lead to new results in the research.

Teaching Aptitude
I feel that I have the ability to explain complicated conceptual material through simple and unassuming terms. I enjoy teaching immensely and have exercised my teaching skills early on in my life through tutoring students who fell behind in their classes.

During my PhD studies at UC San Diego, I have acquired teaching skills and accumulated teaching experiences through various ways. By taking the “Teaching method in computer science” class and participating in the seminar series offered by UC’s PPF (Preparing for Professional Faculty) program, I learned basic teaching elements, such as cognitive strategies, course and syllabus design, and instructional technologies in the classroom. At the same time, I practiced my teaching skills by presenting my research work on the conferences and tutoring undergraduate students in their research projects.

I believe that I am well prepared to take over full teaching duties of a professor for both undergraduate and graduate courses. At the undergraduate level, I can teach fundamental algorithms, data structures, numerical methods, discrete mathematics, and computer architecture in the CSE domain. In the EE domain, I would be interested in teaching basic circuit theory and digital design classes. At the graduate level, I would like to teach classes related to my research area of VLSI physical design, which spans both EE and CSE domains.

Teaching Philosophy
My teaching philosophy is built around four basic ideas: i) fundamental knowledge, ii) motivation and impact, iii) hands on experience, and iv) effective communication.

- **Fundamental knowledge and skills** I believe in the “15 minutes rule”. That it, during 90 minutes of a lecture, at most 15 minutes, or even 5 minutes, of the contents can be remembered by a student after 15 years. Those small portions of information are usually the fundamental knowledge and skills. The instructor’s main responsibility is to deliver that information efficiently and effectively.

- **Motivation and impact** The motivation is the key for a student to succeed in a course. When teaching the fundamental knowledge and skills, rather than teaching students isolated pieces of contents, I will emphasize more on the global structure of those contents and their impacts, thus motivate student to explore more in the field.

- **Hands on experiences** The hands on experiences are very important for students to obtain intuitive understanding of the abstract knowledge. In algorithm and mathematics classes, numerical examples and simplest non-trivial cases can always reveal the essence of a complex mechanism. In engineering classes, an experience of solving various problems arise in the applications is an integral part of engineering education.

- **Effective communication** The efficiency of the teaching highly depends on the effectiveness of the communication. I will ensure the effective communication in my teaching by promoting the interaction in the classroom and using various instructional technologies in different context.